## Haakon County, South Dakota Nontechnical Soil Descriptions

## Ab - Albaton Silty Clay, Depressional

Ab ALBATON SILTY CLAY, DEPRESSIONAL - The Albaton series consists of deep, poorly or very poorly drained, slowly or very slowly permeable soils formed in clayey alluvium on bottom lands. This soil has moderate available water capacity and organic matter content. Flooding is FREQ. Ponding duration is BRIEF.

## Ar - Arvada Silt Loam

Ar ARVADA SILT LOAM - The Arvada series consists of very deep, well drained soils formed in alluvium and colluvium derived from sodic shale. Arvada soils are on fan remnants, terraces, and hillslopes. This soil has low available water capacity and low organic matter content. Flooding is NONE.

## As - Arvada-Slickspots Complex

As ARVADA-SLICKSPOTS COMPLEX - The Arvada series consists of very deep, well drained soils formed in alluvium and colluvium derived from sodic shale. Arvada soils are on fan remnants, terraces, and hillslopes. This soil has low available water capacity and low organic matter content. Flooding is NONE.

As ARVADA-SLICKSPOTS COMPLEX - Slickspots, dry consists of well drained areas with little or no vegetation. The areas are strongly saline and strongly alkaline. This soil has low available water capacity and very low organic matter content. Flooding is NONE.

#### Bc - Bankard Loamy Sand, Hummocky

BC BANKARD LOAMY SAND, HUMMOCKY - The Bankard series consists of deep, well to somewhat excessively drained soils that formed in alluvium from a variety of rocks. Bankard soils are on flood plains and low terraces. This soil has low available water capacity and low organic matter content. Flooding is RARE.

## Bd - Bankard Very Fine Sandy Loam

Bd BANKARD VERY FINE SANDY LOAM - The Bankard series consists of deep, well to somewhat excessively drained soils that formed in alluvium from a variety of rocks. Bankard soils are on flood plains and low terraces. This soil has low available water capacity and low organic matter content. Flooding is OCCAS.

## BkA - Blackpipe Silty Clay Loam, 0 To 2 Percent Slopes

BkA BLACKPIPE SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES - The Blackpipe series consists of moderately deep, well drained soils formed in clayey residuum from shale and mudstone on uplands. Permeability is moderately slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

# BkB - Blackpipe Silty Clay Loam, 2 To 6 Percent Slopes

BkB BLACKPIPE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES - The Blackpipe series consists of moderately deep, well drained soils formed in clayey residuum from shale and mudstone on uplands. Permeability is moderately slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

# Bo - Blackpipe-Wortman Complex

Bo BLACKPIPE-WORTMAN COMPLEX - The Blackpipe series consists of moderately deep, well drained soils formed in clayey residuum from shale and mudstone on uplands. Permeability is moderately slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

Bo BLACKPIPE-WORTMAN COMPLEX - The Wortman series consists of moderately deep, well drained and moderately well drained soils formed in residuum weathered from siltstone on upland fans and flats. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

## Bu - Bullcreek Clay, 0 To 6 Percent Slopes

Bu BULLCREEK CLAY, 0 TO 6 PERCENT SLOPES - The Bullcreek series consists of deep, well drained and moderately well drained soils formed in clayey alluvium on upland valleys, alluvial fans and stream terraces. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

# Bx - Bullcreek-Slickspots Complex

Bx BULLCREEK-SLICKSPOTS COMPLEX - The Bullcreek series consists of deep, well drained and moderately well drained soils formed in clayey alluvium on upland valleys, alluvial fans and stream terraces. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

Bx BULLCREEK-SLICKSPOTS COMPLEX - Slickspots, dry consists of well drained areas with little or no vegetation. The areas are strongly saline and strongly alkaline. This soil has low available water capacity and very low organic matter content. Flooding is NONE.

## Ca - Canning Loam

Ca CANNING LOAM - The Canning series consists of well drained soils formed in loamy material on terraces and outwash plains that are moderately deep over sand and gravel. Permeability is moderate through the solum and rapid in the underlying material. This soil has moderate available water capacity and moderate organic matter content. Flooding is

CbA - Capa Silt Loam, 0 To 6 Percent Slopes

CbA CAPA SILT LOAM, 0 TO 6 PERCENT SLOPES - The Capa series consists of very deep, well drained and moderately well drained soils formed in residual clayey material on terraces and uplands. Permeability is very slow. This soil has moderate available water capacity and low organic matter content. Flooding is NONE.

Cc - Capa-Slickspots Complex

Cc CAPA-SLICKSPOTS COMPLEX - The Capa series consists of very deep, well drained and moderately well drained soils formed in residual clayey material on terraces and uplands. Permeability is very slow. This soil has moderate available water capacity and low organic matter content. Flooding is NONE.

Cc CAPA-SLICKSPOTS COMPLEX - Slickspots, dry consists of well drained areas with little or no vegetation. The areas are strongly saline and strongly alkaline. This soil has low available water capacity and very low organic matter content. Flooding is NONE.

Ct - Capa-Wendte, Channeled, Complex

Ct CAPA-WENDTE, CHANNELED, COMPLEX - The Capa series consists of very deep, well drained and moderately well drained soils formed in residual clayey material on terraces and uplands. Permeability is very slow. This soil has moderate available water capacity and low organic matter content. Flooding is NONE. Ct CAPA-WENDTE, CHANNELED, COMPLEX - The Wendte series consists of deep, moderately well

drained, slowly permeable soils formed in calcareous clayey alluvium. This soil has moderate available water capacity and moderate organic matter content. Flooding is OCCAS.

Cv - Craft Very Fine Sandy Loam

Cv CRAFT VERY FINE SANDY LOAM - The Craft series consists of deep, well drained soils formed in stratified, calcareous alluvium on bottom lands. They have moderate permeability. This soil has high available water capacity and low organic matter content. Flooding is RARE.

Eg - Egas Silty Clay Loam

Eg EGAS SILTY CLAY LOAM - The Egas series consists of very deep, poorly or very poorly drained slowly permeable soils formed in alluvium. They are on flood plains and have slopes of less than 2 percent. This soil has moderate available water capacity and moderate organic matter content. Flooding is OCCAS.

Ha - Haverson Silt Loam

Ha HAVERSON SILT LOAM - The Haverson series consists of deep, well drained soils that formed in alluvium from mixed sources. Haverson soils are on floodplains and low terraces. This soil has high available water capacity and low organic matter content. Flooding is

Hb - Haverson Silt Loam, Channeled

Hb HAVERSON SILT LOAM, CHANNELED - The Haverson series consists of deep, well drained soils that formed in alluvium from mixed sources. Haverson soils are on floodplains and low terraces. This soil has high available water capacity and low organic matter content. Flooding is FREQ.

Hc - Haverson-Craft Complex

HC HAVERSON-CRAFT COMPLEX - The Haverson series consists of deep, well drained soils that formed in alluvium from mixed sources. Haverson soils are on floodplains and low terraces. This soil has high available water capacity and low organic matter content. Flooding is

HC HAVERSON-CRAFT COMPLEX - The Craft series consists of deep, well drained soils formed in stratified, calcareous alluvium on bottom lands. They have moderate permeability. This soil has high available water capacity and low organic matter content. Flooding is RARE.

Ho - Hilmoe Silty Clay

HO HILMOE SILTY CLAY - The Hilmoe series consists of very deep, well drained and moderately well drained soils formed in calcareous clayey alluvium over loamy alluvium. Permeability is slow. These soils are on flood plains of major streams and rivers. This soil has high available water capacity and moderate organic matter content. Flooding is il and Site Information PAGE 3 of 11

#### Haakon County, South Dakota Non Technical Soil Descriptions--Continued

HpB - Hisle Silt Loam, 0 To 6 Percent Slopes

HpB HISLE SILT LOAM, 0 TO 6 PERCENT SLOPES - The Hisle series consists of moderately deep, well drained and moderately well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

Hv - Hoven Silt Loam

HV HOVEN SILT LOAM - The Hoven series consists of very deep, poorly drained soils formed in clayey alluvium in closed basins on uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE. Ponding duration is LONG.

KeA - Kirley Clay Loam, 0 To 2 Percent Slopes

Kea Kirley Clay Loam, 0 to 2 Percent Slopes – The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KeB - Kirley Clay Loam, 2 To 6 Percent Slopes

KeB KIRLEY CLAY LOAM, 2 TO 6 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KeD - Kirley Clay Loam, 6 To 15 Percent Slopes

KeD KIRLEY CLAY LOAM, 6 TO 15 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KfB - Kirley-Canning Complex, 2 To 6 Percent Slopes

KfB KIRLEY-CANNING COMPLEX, 2 TO 6 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KfB KIRLEY-CANNING COMPLEX, 2 TO 6 PERCENT SLOPES - The Canning series consists of well drained soils formed in loamy material on terraces and outwash plains that are moderately deep over sand and gravel. Permeability is moderate through the solum and rapid in the underlying material. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KhA - Kirley-Mosher Complex, 0 To 2 Percent Slopes

Kha Kirley-Mosher Complex, 0 to 2 percent slopes - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is None.

Kha Kirley-Mosher Complex, 0 to 2 percent slopes - The Mosher series consists of deep,

KhA KIRLEY-MOSHER COMPLEX, 0 TO 2 PERCENT SLOPES - The Mosher series consists of deep, moderately well drained and somewhat poorly drained soils formed in alluvium on flood plains, terraces, and uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KhB - Kirley-Mosher Complex, 2 To 6 Percent Slopes

KhB KIRLEY-MOSHER COMPLEX, 2 TO 6 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KhB KIRLEY-MOSHER COMPLEX, 2 TO 6 PERCENT SLOPES - The Mosher series consists of deep,

RNB KIRLEY-MOSHER COMPLEX, 2 TO 6 PERCENT SLOPES - The Mosher series consists of deep, moderately well drained and somewhat poorly drained soils formed in alluvium on flood plains, terraces, and uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KmA - Kirley-Ottumwa Complex, 0 To 2 Percent Slopes

KMA KIRLEY-OTTUMWA COMPLEX, 0 TO 2 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KMA KIRLEY-OTTUMWA COMPLEX, 0 TO 2 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KmB - Kirley-Ottumwa Complex, 2 To 6 Percent Slopes

KmB KIRLEY-OTTUMWA COMPLEX, 2 TO 6 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KMB KIRLEY-OTTUMWA COMPLEX, 2 TO 6 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is

KmC - Kirley-Ottumwa Complex, 6 To 9 Percent Slopes

KMC KIRLEY-OTTUMWA COMPLEX, 6 TO 9 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KmC KIRLEY-OTTUMWA COMPLEX, 6 TO 9 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KnD - Kirley-Vivian Complex, 6 To 15 Percent Slopes

KnD KIRLEY-VIVIAN COMPLEX, 6 TO 15 PERCENT SLOPES - The Kirley series consists of deep, well drained soils formed in alluvium on terraces. These soils have moderately slow or slow permeability. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

KnD KIRLEY-VIVIAN COMPLEX, 6 TO 15 PERCENT SLOPES - The Vivian series consists of deep,

KnD KIRLEY-VIVIAN COMPLEX, 6 TO 15 PERCENT SLOPES - The Vivian series consists of deep, somewhat excessively to excessively drained soils formed in gravelly materials over shale. Permeability is moderately rapid. This soil has low available water capacity and low organic matter content. Flooding is NONE.

Ko - Kolls Clay

Ko KOLLS CLAY - The Kolls series consists of very deep, poorly and very poorly drained soils formed in clayey alluvium in upland basins. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KyA - Kyle Clay, 0 To 3 Percent Slopes

KyA KYLE CLAY, 0 TO 3 PERCENT SLOPES - The Kyle series consists of deep, well drained soils formed in sediments weathered from clay shale on uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

KyB - Kyle Clay, 3 To 6 Percent Slopes

KyB KYLE CLAY, 3 TO 6 PERCENT SLOPES - The Kyle series consists of deep, well drained soils formed in sediments weathered from clay shale on uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

LaB - Lakoma Silty Clay, 3 To 6 Percent Slopes

LaB LAKOMA SILTY CLAY, 3 TO 6 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

LaC - Lakoma Silty Clay, 6 To 9 Percent Slopes

LaC LAKOMA SILTY CLAY, 6 TO 9 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

LaD - Lakoma Silty Clay, 6 To 15 Percent Slopes

LaD LAKOMA SILTY CLAY, 6 TO 15 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

LbE - Lakoma-Vivian Complex, 9 To 25 Percent Slopes

LbE LAKOMA-VIVIAN COMPLEX, 9 TO 25 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE. LAKOMA-VIVIAN COMPLEX, 9 TO 25 PERCENT SLOPES - The Vivian series consists of deep, somewhat excessively to excessively drained soils formed in gravelly materials over shale. Permeability is moderately rapid. This soil has low available water capacity and low organic matter content. Flooding is NONE.

Lo - Lohmiller Silty Clay

Lo LOHMILLER SILTY CLAY - The Lohmiller series consists of very deep, well drained soils formed in alluvium on bottom lands. Permeability is slow or moderately slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is RARE.

Lp - Lohmiller Silty Clay, Channeled

Lp LOHMILLER SILTY CLAY, CHANNELED - The Lohmiller series consists of very deep, well drained soils formed in alluvium on bottom lands. Permeability is slow or moderately slow. This soil has moderate available water capacity and low organic matter content. Flooding is OCCAS.

Lv - Lohmiller-Arvada Complex

Lv LOHMILLER-ARVADA COMPLEX - The Lohmiller series consists of very deep, well drained soils formed in alluvium on bottom lands. Permeability is slow or moderately slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is PAPF

Lv LOHMILLER-ARVADA COMPLEX - The Arvada series consists of very deep, well drained soils formed in alluvium and colluvium derived from sodic shale. Arvada soils are on fan remnants, terraces, and hillslopes. This soil has low available water capacity and low organic matter content. Flooding is NONE.

MaE - Midway Silty Clay Loam, 15 To 40 Percent Slopes

MaE MIDWAY SILTY CLAY LOAM, 15 TO 40 PERCENT SLOPES - The Midway series consists of shallow, well drained soils that formed in calcareous platy, clayey shale. Midway soils are on ridge crests and hills in shale bedrock uplands. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

Mo - Mosher Silt Loam

Mo MOSHER SILT LOAM - The Mosher series consists of deep, moderately well drained and somewhat poorly drained soils formed in alluvium on flood plains, terraces, and uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

Nb - Nimbro Silty Clay Loam

Nb NIMBRO SILTY CLAY LOAM - The Nimbro series consists of very deep, well drained and moderately well drained, moderately permeable soils formed in alluvium. These flood plain and low terrace soils have slopes of less than 2 percent. This soil has high available water capacity and moderate organic matter content. Flooding is RARE.

Nc - Nimbro Silty Clay Loam, Channeled

Nc NIMBRO SILTY CLAY LOAM, CHANNELED - The Nimbro series consists of very deep, well drained and moderately well drained, moderately permeable soils formed in alluvium. These flood plain and low terrace soils have slopes of less than 2 percent. This soil has high available water capacity and moderate organic matter content. Flooding is FREQ.

NuA - Nunn Loam, 0 To 2 Percent Slopes

NuA NUNN LOAM, 0 TO 2 PERCENT SLOPES - The Nunn series consists of deep, well drained soils that formed in mixed alluvium. Nunn soils are on terraces or alluvial fans and have slopes of 0 to 9 percent. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

NuB - Nunn Loam, 2 To 6 Percent Slopes

NuB NUNN LOAM, 2 TO 6 PERCENT SLOPES - The Nunn series consists of deep, well drained soils that formed in mixed alluvium. Nunn soils are on terraces or alluvial fans and have slopes of 0 to 9 percent. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

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#### Haakon County, South Dakota Non Technical Soil Descriptions--Continued

NuC - Nunn Loam, 6 To 9 Percent Slopes

NuC NUNN LOAM, 6 TO 9 PERCENT SLOPES - The Nunn series consists of deep, well drained soils that formed in mixed alluvium. Nunn soils are on terraces or alluvial fans and have slopes of 0 to 9 percent. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

NxD - Nunn-Nihill Complex, 6 To 15 Percent Slopes

NxD NUNN-NIHILL COMPLEX, 6 TO 15 PERCENT SLOPES - The Nunn series consists of deep, well drained soils that formed in mixed alluvium. Nunn soils are on terraces or alluvial fans and have slopes of 0 to 9 percent. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

NxD NUNN-NIHILL COMPLEX, 6 TO 15 PERCENT SLOPES - The Nihill series consists of deep, well

drained soils formed in gravelly alluvium from mixed sources. They are on late Pleistocene terraces and terrace remnants. Slopes are both simple and complex and range from 0 to 80 percent. This soil has low available water capacity and low organic matter content. Flooding is NONE.

ObE - Okaton-Lakoma Silty Clays, 15 To 40 Percent Slopes

Obe Okaton-Lakoma Silty Clays, 15 to 40 Percent Slopes - The Okaton series consists of shallow, well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

Obe Okaton-Lakoma Silty Clays, 15 to 40 Percent Slopes - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

Oc - Onita Silt Loam

Oc ONITA SILT LOAM - The Onita series consists of very deep, well and moderately well drained soils formed in local alluvium mainly on footslopes. These soils have moderately slow and slow permeability. This soil has high available water capacity and high organic matter content. Flooding is NONE.

OdB - Opal Clay, 3 To 6 Percent Slopes

OdB OPAL CLAY, 3 TO 6 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OdC - Opal Clay, 6 To 9 Percent Slopes

OdC OPAL CLAY, 6 TO 9 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OdD - Opal Clay, 6 To 15 Percent Slopes

OdD OPAL CLAY, 6 TO 15 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OeB - Opal-Promise Clays, 3 To 6 Percent Slopes

OeB OPAL-PROMISE CLAYS, 3 TO 6 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

matter content. Flooding is NONE.

OEB OPAL-PROMISE CLAYS, 3 TO 6 PERCENT SLOPES - The Promise series consists of deep or very deep, well drained soils formed in clayey sediments weathered from clay shales. These soils are on uplands, fans and terraces. Permeability is slow or very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OeC - Opal-Promise Clays, 6 To 9 Percent Slopes

OeC OPAL-PROMISE CLAYS, 6 TO 9 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OeC OPAL-PROMISE CLAYS, 6 TO 9 PERCENT SLOPES - The Promise series consists of deep or very deep, well drained soils formed in clayey sediments weathered from clay shales. These soils are on uplands, fans and terraces. Permeability is slow or very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

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## Of - Orthents, Clayey

Of ORTHENTS, CLAYEY - Orthents, clayey consists of areas where gravel has been excavated and removed to expose soft shale. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

Og - Orthents, Gravelly

Og ORTHENTS, GRAVELLY - Orthents, gravelly consists of areas where gravel has been excavated and removed. Some areas have been smoothed and 8 to 14 inches of loamy overburden has been replaced. This soil has low available water capacity and organic matter content. Flooding is NONE.

OtA - Ottumwa Silty Clay, O To 3 Percent Slopes

Ota Ottumwa silty Clay, 0 to 3 Percent Slopes - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OtB - Ottumwa Silty Clay, 3 To 6 Percent Slopes

OtB OTTUMWA SILTY CLAY, 3 TO 6 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OvA - Ottumwa-Capa Complex, O To 3 Percent Slopes

Ova Ottumwa-Capa Complex, 0 to 3 percent slopes - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OVA OTTUMWA-CAPA COMPLEX, 0 TO 3 PERCENT SLOPES - The Capa series consists of very deep, well drained and moderately well drained soils formed in residual clayey material on terraces and uplands. Permeability is very slow. This soil has moderate available water capacity and low organic matter content. Flooding is NONE.

OwB - Ottumwa-Lakoma Silty Clays, 3 To 6 Percent Slopes

Owb OTTUMWA-LAKOMA SILTY CLAYS, 3 TO 6 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

Owb OTTUMWA-LAKOMA SILTY CLAYS, 3 TO 6 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

OwC - Ottumwa-Lakoma Silty Clays, 6 To 9 Percent Slopes

OwC OTTUMWA-LAKOMA SILTY CLAYS, 6 TO 9 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OWC OTTUMWA-LAKOMA SILTY CLAYS, 6 TO 9 PERCENT SLOPES - The Lakoma series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

OxC - Ottumwa-Razor Silty Clays, 6 To 9 Percent Slopes

OxC OTTUMWA-RAZOR SILTY CLAYS, 6 TO 9 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OXC OTTUMWA-RAZOR SILTY CLAYS, 6 TO 9 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OyC - Ottumwa-Razor-Savo Complex, 6 To 15 Percent Slopes

OyC OTTUMWA-RAZOR-SAVO COMPLEX, 6 TO 15 PERCENT SLOPES - The Ottumwa series consists of deep, well drained soils formed in clayey sediments on uplands. Permeability is slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

OYC OTTUMWA-RAZOR-SAVO COMPLEX, 6 TO 15 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

OyC OTTUMWA-RAZOR-SAVO COMPLEX, 6 TO 15 PERCENT SLOPES - The Savo series consists of very deep, well drained soil formed in silty sediments on uplands and terraces. Permeability is moderately slow. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

PeC - Pierre Clay, 6 To 9 Percent Slopes

Pec PIERRE CLAY, 6 TO 9 PERCENT SLOPES - The Pierre series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is very slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

PeD - Pierre Clay, 6 To 15 Percent Slopes

Ped PIERRE CLAY, 6 TO 15 PERCENT SLOPES - The Pierre series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is very slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

PkE - Pierre-Samsil Clays, 15 To 25 Percent Slopes

PkE PIERRE-SAMSIL CLAYS, 15 TO 25 PERCENT SLOPES - The Pierre series consists of moderately deep, well drained soils formed in residuum weathered from clay shales on uplands. Permeability is very slow. This soil has very low available water capacity and moderate organic matter content. Flooding is NONE.

PkE PIERRE-SAMSIL CLAYS, 15 TO 25 PERCENT SLOPES - The Samsil series consists of shallow,

PKE PIERRE-SAMSIL CLAYS, 15 TO 25 PERCENT SLOPES - The Samsil series consists of shallow well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

PrA - Promise Clay, 0 To 3 Percent Slopes

PrA PROMISE CLAY, 0 TO 3 PERCENT SLOPES - The Promise series consists of deep or very deep, well drained soils formed in clayey sediments weathered from clay shales. These soils are on uplands, fans and terraces. Permeability is slow or very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

PrB - Promise Clay, 3 To 6 Percent Slopes

PrB PROMISE CLAY, 3 TO 6 PERCENT SLOPES - The Promise series consists of deep or very deep, well drained soils formed in clayey sediments weathered from clay shales. These soils are on uplands, fans and terraces. Permeability is slow or very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

RaB - Razor Silty Clay, 2 To 6 Percent Slopes

RAB RAZOR SILTY CLAY, 2 TO 6 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

RaC - Razor Silty Clay, 6 To 9 Percent Slopes

RAC RAZOR SILTY CLAY, 6 TO 9 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

RbD - Razor-Midway Complex, 6 To 15 Percent Slopes

RbD RAZOR-MIDWAY COMPLEX, 6 TO 15 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

RbD RAZOR-MIDWAY COMPLEX, 6 TO 15 PERCENT SLOPES - The Midway series consists of shallow, well drained soils that formed in calcareous platy, clayey shale. Midway soils are on ridge crests and hills in shale bedrock uplands. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

RdD - Razor-Shingle Complex, 6 To 15 Percent Slopes

RAZOR-SHINGLE COMPLEX, 6 TO 15 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum drained from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

RdD RAZOR-SHINGLE COMPLEX, 6 TO 15 PERCENT SLOPES - The Shingle series consists of well drained soils that are shallow to bedrock. They formed in residuum and colluvial slopewash derived from interbedded shale and sandstone. Shingle soils are on bedrock controlled upland hills and ridges. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

ReA - Ree Loam, 0 To 2 Percent Slopes

ReA REE LOAM, 0 TO 2 PERCENT SLOPES - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

ReB - Ree Loam, 2 To 6 Percent Slopes

ReB REE LOAM, 2 TO 6 PERCENT SLOPES - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

RfB - Ree-Canning Loams, 2 To 6 Percent Slopes

RfB REE-CANNING LOAMS, 2 TO 6 PERCENT SLOPES - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

RfB REE-CANNING LOAMS, 2 TO 6 PERCENT SLOPES - The Canning series consists of well drained soils formed in loamy material on terraces and outwash plains that are moderately deep over sand and gravel. Permeability is moderate through the solum and rapid in the underlying material. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

RfC - Ree-Canning Loams, 6 To 9 Percent Slopes

RfC REE-CANNING LOAMS, 6 TO 9 PERCENT SLOPES - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

RfC REE-CANNING LOAMS, 6 TO 9 PERCENT SLOPES - The Canning series consists of well drained soils formed in loamy material on terraces and outwash plains that are moderately deep over sand and gravel. Permeability is moderate through the solum and rapid in the underlying material. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE.

Rh - Ree-Hoven Complex

Rh REE-HOVEN COMPLEX - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE. Rh REE-HOVEN COMPLEX - The Hoven series consists of very deep, poorly drained soils formed in clayey alluvium in closed basins on uplands. Permeability is very slow. This soil has moderate available water capacity and moderate organic matter content. Flooding is NONE. Ponding duration is LONG.

RkD - Ree-Vivian Complex, 6 To 15 Percent Slopes

RkD REE-VIVIAN COMPLEX, 6 TO 15 PERCENT SLOPES - The Ree series consists of very deep, well drained soils formed in loamy sediments on terraces and uplands. Permeability is moderate. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

RkD REE-VIVIAN COMPLEX, 6 TO 15 PERCENT SLOPES - The Vivian series consists of deep, somewhat excessively to excessively drained soils formed in gravelly materials over shale. Permeability is moderately rapid. This soil has low available water capacity and low organic matter content. Flooding is NONE.

Rv - Riverwash

Rv RIVERWASH - Riverwash consists of stratified clayey, silty, sandy and/or gravelly sediments that flood during spring thaws and normal high water events. These areas are usually barren and are subject to shifting during the flooding events. This soil has low available water capacity and low organic matter content. Flooding is FREQ.

SbF - Samsil Clay, 25 To 60 Percent Slopes

SbF SAMSIL CLAY, 25 TO 60 PERCENT SLOPES - The Samsil series consists of shallow, well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

ScF - Samsil-Nihill Complex, 6 To 40 Percent Slopes

ScF SAMSIL-NIHILL COMPLEX, 6 TO 40 PERCENT SLOPES - The Samsil series consists of shallow, well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is

SCF SAMSIL-NIHILL COMPLEX, 6 TO 40 PERCENT SLOPES - The Nihill series consists of deep, well drained soils formed in gravelly alluvium from mixed sources. They are on late Pleistocene terraces and terrace remnants. Slopes are both simple and complex and range from 0 to 80 percent. This soil has low available water capacity and low organic matter content. Flooding is NONE.

SdF - Samsil-Rock Outcrop Complex, 15 To 60 Percent Slopes

SdF SAMSIL-ROCK OUTCROP COMPLEX, 15 TO 60 PERCENT SLOPES - The Samsil series consists of shallow, well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

SdF SAMSIL-ROCK OUTCROP COMPLEX, 15 TO 60 PERCENT SLOPES - Rock outcrop consists of soft shale that can be ripped or dug. This soil has moderate available water capacity and low organic matter content. Flooding is NONE.

SoE - Sansarc-Opal Clays, 9 To 40 Percent Slopes

SOE SANSARC-OPAL CLAYS, 9 TO 40 PERCENT SLOPES - The Sansarc series consists of shallow, well drained soils formed in clay residuum weathered from shale within the dissected shale plain. Permeability is slow. This soil has very low available water capacity and low

organic matter content. Flooding is NONE.
SoE SANSARC-OPAL CLAYS, 9 TO 40 PERCENT SLOPES - The Opal series consists of moderately deep, well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

SrA - Savo Silt Loam, 0 To 2 Percent Slopes

STA SAVO SILT LOAM, 0 TO 2 PERCENT SLOPES - The Savo series consists of very deep, well drained soil formed in silty sediments on uplands and terraces. Permeability is moderately slow. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

SrB - Savo Silt Loam, 2 To 6 Percent Slopes

STB SAVO SILT LOAM, 2 TO 6 PERCENT SLOPES - The Savo series consists of very deep, well drained soil formed in silty sediments on uplands and terraces. Permeability is moderately slow. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

SrC - Savo Silt Loam, 6 To 9 Percent Slopes

STC SAVO SILT LOAM, 6 TO 9 PERCENT SLOPES - The Savo series consists of very deep, well drained soil formed in silty sediments on uplands and terraces. Permeability is moderately slow. This soil has high available water capacity and moderate organic matter content. Flooding is NONE.

## StF - Schamber-Samsil Complex, 6 To 60 Percent Slopes

Stf SCHAMBER-SAMSIL COMPLEX, 6 TO 60 PERCENT SLOPES - The Schamber series consists of well to excessively drained soils that are very shallow over sand and gravel outwash sediments. Permeability is rapid or very rapid. This soil has very low available water capacity and low organic matter content. Flooding is NONE. Stf SCHAMBER-SAMSIL COMPLEX, 6 TO 60 PERCENT SLOPES - The Samsil series consists of shallow, well drained soils formed in residuum weathered from shale. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding

SuE - Shingle Silty Clay Loam, 15 To 40 Percent Slopes

SUE SHINGLE SILTY CLAY LOAM, 15 TO 40 PERCENT SLOPES - The Shingle series consists of well drained soils that are shallow to bedrock. They formed in residuum and colluvial slopewash derived from interbedded shale and sandstone. Shingle soils are on bedrock controlled upland hills and ridges. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

SwE - Shingle-Razor Complex, 15 To 25 Percent Slopes

SWE SHINGLE-RAZOR COMPLEX, 15 TO 25 PERCENT SLOPES - The Shingle series consists of well drained soils that are shallow to bedrock. They formed in residuum and colluvial slopewash derived from interbedded shale and sandstone. Shingle soils are on bedrock controlled upland hills and ridges. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

SWE SHINGLE-RAZOR COMPLEX, 15 TO 25 PERCENT SLOPES - The Razor series consists of moderately deep, well drained, slowly permeable soils that formed in alluvium and residuum derived from saline calcareous shales. Razor soils are on uplands and breaks to major drainages. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.

# W - Water

is NONE.

w WATER - These are areas of water that are normally less than 40 acres in size. This soil has available water capacity and organic matter content.

## Wc - Wendte Silty Clay

Wc WENDTE SILTY CLAY - The Wendte series consists of deep, moderately well drained, slowly permeable soils formed in calcareous clayey alluvium. This soil has moderate available water capacity and moderate organic matter content. Flooding is RARE.

# Wd - Wendte-Herdcamp Silty Clays, Channeled

Wd WENDTE-HERDCAMP SILTY CLAYS, CHANNELED - The Wendte series consists of deep, moderately well drained, slowly permeable soils formed in calcareous clayey alluvium. This soil has moderate available water capacity and moderate organic matter content. Flooding is OCCAS. Wd WENDTE-HERDCAMP SILTY CLAYS, CHANNELED - The Herdcamp series consists of very deep, very poorly drained, slowly permeable soils on toe slopes. They formed in clayey alluvium. This soil has moderate available water capacity and moderate organic matter content. Flooding is FREO.

WsE - Wendte, Channeled-Sansarc Complex, 0 To 60 Percent Slopes

WSE WENDTE, CHANNELED-SANSARC COMPLEX, 0 TO 60 PERCENT SLOPES - The Wendte series consists of deep, moderately well drained, slowly permeable soils formed in calcareous clayey alluvium. This soil has moderate available water capacity and moderate organic matter content. Flooding is OCCAS.

WSE WENDTE, CHANNELED-SANSARC COMPLEX, 0 TO 60 PERCENT SLOPES - The Sansarc series consists of shallow, well drained soils formed in clay residuum weathered from shale within the dissected shale plain. Permeability is slow. This soil has very low available water capacity and low organic matter content. Flooding is NONE.

# Ww - Wortman-Wanblee Silt Loams, 0 To 2 Percent Slopes

Ww WORTMAN-WANBLEE SILT LOAMS, 0 TO 2 PERCENT SLOPES - The Wortman series consists of moderately deep, well drained and moderately well drained soils formed in residuum weathered from siltstone on upland fans and flats. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE. Ww WORTMAN-WANBLEE SILT LOAMS, 0 TO 2 PERCENT SLOPES - The Wanblee series consists of moderately deep, well drained, or moderately well drained soils formed in residuum weathered from siltstone on upland fans and flats. Permeability is very slow. This soil has low available water capacity and moderate organic matter content. Flooding is NONE.